

## REMARKS

Claims 1-7, 10-14 and 23-24, as amended, are currently pending and appear in this application for the Examiner's review and reconsideration.

Claims 2, 10 and 24 were rejected under the second paragraph of 35 USC §112 for the reasons set forth on page 2 of the action. Applicants traverse the assertion that "chlorinated hydrocarbons" are undefined.

Rather than being undefined, that term signifies a well known, clear and distinct, specific class of chemical compounds. A skilled artisan and every chemist for that matter knows what compounds are encompassed by this term and what compounds are not.

The Examiner notes that certain chlorinated hydrocarbons are highly toxic for humans. While this is true, it should be noted that toxicity is largely a question of quantity, and not only of quality. In this regard, any chemical compound, even water, would be toxic if consumed in excessive amounts, or if administered or consumed in unhealthy amounts. In other words, toxicity is not an issue of the present invention, but only reduction of explosiveness is. The skilled person, on the other hand, knows that DDT is a toxic substance and would not select this specific compound, or other highly toxic specimen, when working the present invention in the context of microcapsules intended for consumption by humans. For this use, a less toxic chlorinated hydrocarbon could be selected. One may envisage, however, a fragrance powder not used for being contacted with humans, but for adding to pesticides, in order to mask the unpleasant taste of the latter, for example. In this example, the toxicity of the chlorinated compound to humans is less relevant or may be indicated in the handling prescriptions, as is generally the case with pesticides. Thus, in view of the above example, the applicant takes the position that the toxicity to humans of some substances suitable for working the present invention is not a valid objection under 35 USC §112, since it is clear as to what compounds are being claimed.

Before addressing the prior art rejections, a brief review of the claimed invention would be helpful. The present invention relates to *microcapsules*, i.e., capsules that are generally known to have a size of about 5-500  $\mu\text{m}$ , and which comprise a perfuming or flavoring agent dispersed or adsorbed within a polymeric carrier. Microcapsules are known to rise and disperse in the air easily because of their small size and the presence of a polymeric carrier such as starch or other carbohydrates, especially when they contain a high content of volatile fragrances or

flavors. These microcapsules are *spray-dried* and also are hazardous when dispersed, since they are highly flammable and likely to cause an explosion. The risk of an explosion is highest during the process of preparing microcapsules because microcapsules are often dispersed in the air for drying, such as during the spray-drying step. Despite the likelihood of severe damages to equipment and machinery and to staff handling the microcapsules, the problems of safety hazards of microcapsules have not been addressed thus far.

The present invention seeks to provide spray-dried microcapsules that are safer to prepare and handle by incorporating a fireproofing agent that is susceptible of reducing the microcapsules' inflammability and dust hazard explosive class. Such advantageous effect is achieved by incorporating fireproofing agents or explosion suppressants which efficiently reduce the strength of explosion and therefore reduce the risk of industrial injury to those handling powders and materials containing microcapsules. Examples of fireproofing agents that can be used according to the invention include salts, such as those listed in claims 2 and 7.

The presently pending claims were rejected under 35 USC §102(e) as being obvious over US patent 6,555,098 to Murphy et al. ("Murphy") for the reasons set forth on pages 3-4 of the action. Applicant traverses this rejection.

Present claim 1 relates to a microcapsules comprising a perfuming or flavoring ingredient as well as a fireproofing agent, wherein the fireproofing agent is not NaHCO<sub>3</sub>. Claim 1 thus specifically excludes sodium bicarbonate, that is, NaHCO<sub>3</sub>, from the composition. Murphy, in mentioning sodium bicarbonate as an additive, thus does not destroy the novelty of present claims which specifically disclaim sodium bicarbonate. Nor does the disclosure in Murphy teach or suggest the use of any of the other additives claimed or the other features of the present claims.

Murphy discloses a coating, rather than a spray dried microcapsule comprising both a fireproofing agent and fragrance ingredient. Claim 1 differs from the entire teaching of Murphy in another point. Present claim 1 claims a spray-dried microcapsule comprising both, a perfuming (or flavoring) ingredient as well as a fireproofing agent. The capsules of Murphy are not spray dried. The text position cited in the office action exclusively refers to the bicarbonate powder as such, not yet being coated on the perfuming ingredient. In Murphy, the aqueous dispersion is atomized and sprayed into heated air to remove the aqueous phase, and to provide a free-flowing polymer-encapsulated bicarbonate powder product. (col. 2, lines 60-65). In other

words, only the bicarbonate powder, free of fragrance materials, is obtained by spray drying, and this is done to prepare it for addition to the other ingredients. Since the present invention does not use sodium carbonate and further encapsulates a fireproof material with the perfuming ingredients, the Murphy patent is not relevant to the patentability of the present claims.

In contrast to the present use of encapsulation, Murphy instead discloses coating processes as ways of combining the bicarbonate powder and the fragrance. The application of the polymer coating to the ingredient crystallite surfaces is accomplished by conventional means such as pan coating, fluidized coating, centrifugal fluidized coating and the like [...](col. 2, lines 48-59). The examples of Murphy confirm the description by utilizing fluidized bed (Example 1) and coating in a rotating evaporator (Example 2, lines 41-43).

Also, the text of the general description as well as the examples of Murphy do not disclose a single, spray-dried microcapsule which contains both the fragrance ingredient as well as a fireproofing agent. To the contrary, Murphy teaches coating of a fragrance crystallites with bicarbonate powder, the coating solution containing a polymer ingredient. The coated crystallites of Murphy are thus totally different from the spray dried microcapsules of the present invention, notably also in terms of intersectional structure.

For the sake of clarity, it is indicated that Murphy discloses two ways of coating. In one way, separate procedures are applied for adding the polymer coating to the fragrance and bicarbonate powders, respectively, followed by dry-blending the coated powders (col.2, lines 32-36). According to a second, alternative embodiment the crystalline fragrances and the bicarbonate powder are pre-blended and, in a further step, mixed with the polymer coating (col. 2, lines 37-47).

Murphy also does not disclose spray dried emulsion, implying liquid fragrance materials. This further difference from the teaching of Murphy and the present invention is seen in that the fragrance material employed by Murphy is in the form of crystals (col. 2, lines 21-27), which are to be coated later. The particulate fragrance starting material is preferably selected from crystalline organic compounds which include vanillin, ethyl vanillin [...]. The use of crystalline organic fragrances is crucial to the invention of Murphy, because the coating with bicarbonate can only be managed if there is a solid (crystallite) core. Murphy's coating would not work if the fragrance material was present in the form of a liquid, because a non-emulsified liquid alone cannot be coated.

The spray-dried microcapsule of claim 1, as well as that of the method of claim 7, require the presence of a fragrance or flavoring ingredient in liquid form. This can be illustrated by claim 7, which recites that an aqueous emulsion of the perfuming or flavoring ingredient is used in as carrier polymeric material. Emulsions are suspensions of hydrophobic liquids in hydrophilic ones, or vice versa. The term “emulsion” does thus exclude crystalline organic fragrance compounds as disclosed by Murphy. In the same line, if the fragrance material is not present in liquid, emulsified form, it could not be spray dried as required by present claim 1.

It is noted that the recitation “spray-dried” in present claim 1 defines microcapsules that are obtained in a completely different way from what is disclosed by Murphy. Consequently, such products have a different structural organization and different features, and Murphy's products are excluded from the scope of present claims due to this recitation.

Thus, it has clearly been established that claims 1-6, 11 and 13 are different from Murphy and hence, not disclosed in this reference because the present claims 1-6:

- disclaim sodium bicarbonate,
- relate to a spray dried microcapsules comprising both within the same, spray dried capsule: a fragrance material and a fireproofing agent.
- refer to spray dried fragrance materials implying an emulsion and, hence, the use of liquid, “emulsified” fragrance materials, not solid crystals.

Claim 7 is further distinguishable from Murphy due to the recitation “an aqueous emulsion of the perfuming or flavoring ingredient in the carrier polymeric material.” As noted above, Murphy teaches crystallite organic fragrance compounds (see above). Murphy does not disclose or teach the spray-drying an emulsion comprising both, a fireproofing agent and a perfuming or flavoring ingredient. In contrast, as noted above, Murphy teaches the coating of a (spray dried) bicarbonate powder onto crystallite fragrances by typical coating procedures, such as fluidized bed coating. As the Examiner correctly states, in addition and as a logic consequence of the different teachings, Murphy does not disclose the step of adding a fireproofing agent to an aqueous emulsion.

From the above it becomes clear that Murphy, insisting on the use of bicarbonate, and, in addition, insisting on the use of crystalline organic fragrance compounds cannot suggest or hint at the spray dried microcapsule comprising both, fireproofing agent and emulsified fragrance or flavoring material, because both principles are different, and even incompatible with

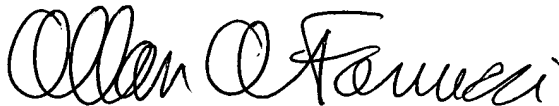
each other. One cannot, logically, teach crystalline fragrance compounds and suggesting emulsified, liquid fragrances at the same time. The difference between Murphy and the present invention would not have been obvious to the skilled person, as they relate to alternative ways of manufacturing excluding each other. The claims of the present invention are thus non-obvious in view of Murphy.

What is more, and what was discussed earlier and thus adds to the arguments presented herein is that the present invention is about fireproofing agents. Murphy is not concerned with reducing explosiveness of fine particles constituting combustible dust. Furthermore, Murphy does not suggest fireproofing agents as part of fragrance or flavoring microcapsules, sodium bicarbonate being excluded from the scope of the present claims. Certainly, Murphy is completely irrelevant to the present method claims. As to the product claims, Murphy is not teaching to add a fireproofing agent and if the compounds added do not inherently achieve this feature.

Accordingly, the present invention as claimed is thus different from Murphy and cannot be obtained from it in any obvious ways. In view of the preceding explanation, the entire application is believed to be in condition for allowance, early notice of which would be appreciated. Should any issues remain, a personal or telephonic interview is respectfully requested to discuss the same in order to expedite the allowance of all the claims in this application.

Respectfully submitted,

Date: 11/21/05

  
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